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ABSTRACT

By 1969-70 it was clear to a number of development communities at both the state and federal level that education didn't need more programs, but more programs that work. Research and development products that address a wide variety of local needs were available. Over the past four or five years, more research and development funding has been used for dissemination as dissemination has emerged as a potentially high payoff activity in terms of school improvement. The results are far from conclusive, but some early data indicate that dissemination is a successful strategy for school improvement--in New Jersey, 432 of 589 active school districts adopted or adapted at least one of 35 different programs made available to the districts; high-need urban center districts are at least minimal adopters; 83 percent of the highest need districts in the state have adopted a validated or other quality controlled program since 1972; and a greater percentage of the lowest rated districts are adopters than are higher rated districts. Data indicate that student learning is being increased by the adopted programs. (Author/IRT)

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Dissemination As A Strategy for School Improvement

Paper Presented AERA 1977

by

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New Jersey "T&E" Legislation

The New Jersey State Constitution of 1875 directed the legislature to:

> provide for the maintenance and support of a thorough and efficient system of free public schools.

In 1903, the legislature placed responsibility on the State Board of Education and through it, the Commissioner, to take steps to implement the Constitutional Amendment. This legislation authorized the Commissioner to:

> inquire into and ascertain the thoroughness and efficiency of operation of any of the schools of the public school system of the State...

The matter rested there, and it was assumed that the public school system was meeting the Constitutional mandate until suit was brought against the State in the Courts of New Jersey, charging that Robinson, the plaintiff, was not receiving educational opportunity equivalent to that existing in other communities, and that reliance on property taxes as a means of financing schools further contributed to that inequality of opportunity. (Robinson vs. Cahill). In 1973, the Courts, deciding for the plaintiff, directed the legislature to define the educational obligation intended by the phrase "thorough and efficient" and to develop a plan of financing to meet the Constitutional mandate. Chapter 212 was the legislature's response to that State Supreme Court decision.

Recognizing that "thoroughness and efficiency" (T&E) of school systems is a condition which would vary with present and changing needs of both the State and each school district and community, the Joint Education Committee did not call for uniformity between districts in achieving a specified level of accomplishment around specified educational goals. Instead, it called for a plan which would "test efficiency of education as a steadily growing and evolving concept."

Fortunately, in the past five years or so, New Jersey, along with a few other states, has been pioneering in ways that place it today in position to begin to carry out the expectations of Chapter 212. The plan worked out for implementing the law is the result of a stream of work involving many school district, county, State Department, and legislative people and outside consultants. It also follows several years of experimentation by cooperating school districts in the State which have found it possible in their practical world to achieve significant improvements in educational achievement. The result seems to be a process which is at once meaningful and realistic for school districts to employ and has been shown at the same time to improve education as schools become "thorough and efficient."

The Dual Intermediate Unit Structure

The new legislation has two thrusts, one of monitoring and school approval aimed at ensuring that the provisions of T&E are carried out and, secondly and most important educationally, the aim of school improvement. The role of monitoring and approval is clearly vested in the SEA. The aim of school improvement is vested with the LEA. It is the LEA which sets its goals; assesses needs; sets standards, curriculum and plans for school improvement. The Legislation is clear that the SEA can only intervene in the local school program if the LEA fails to take appropriate action. However, while the legislation does not mandate an SEA role in school improvement, LEAs expect assistance in this area. But they expect this assistance in a manner which will not jeopardize their autonomy.

Since 1968, New Jersey has been experimenting with a dual state intermediate unit structure. County Offices of the State Education Agency have existed in the State since 1903. These units have traditionally focused on operational and regulatory tasks. In 1968, an Educational Improvement Center (EIC) was initiated to serve the developmental and improvement needs of an eight-county region of the State. All regions of the State are now served by four Educational Improvement Centers.

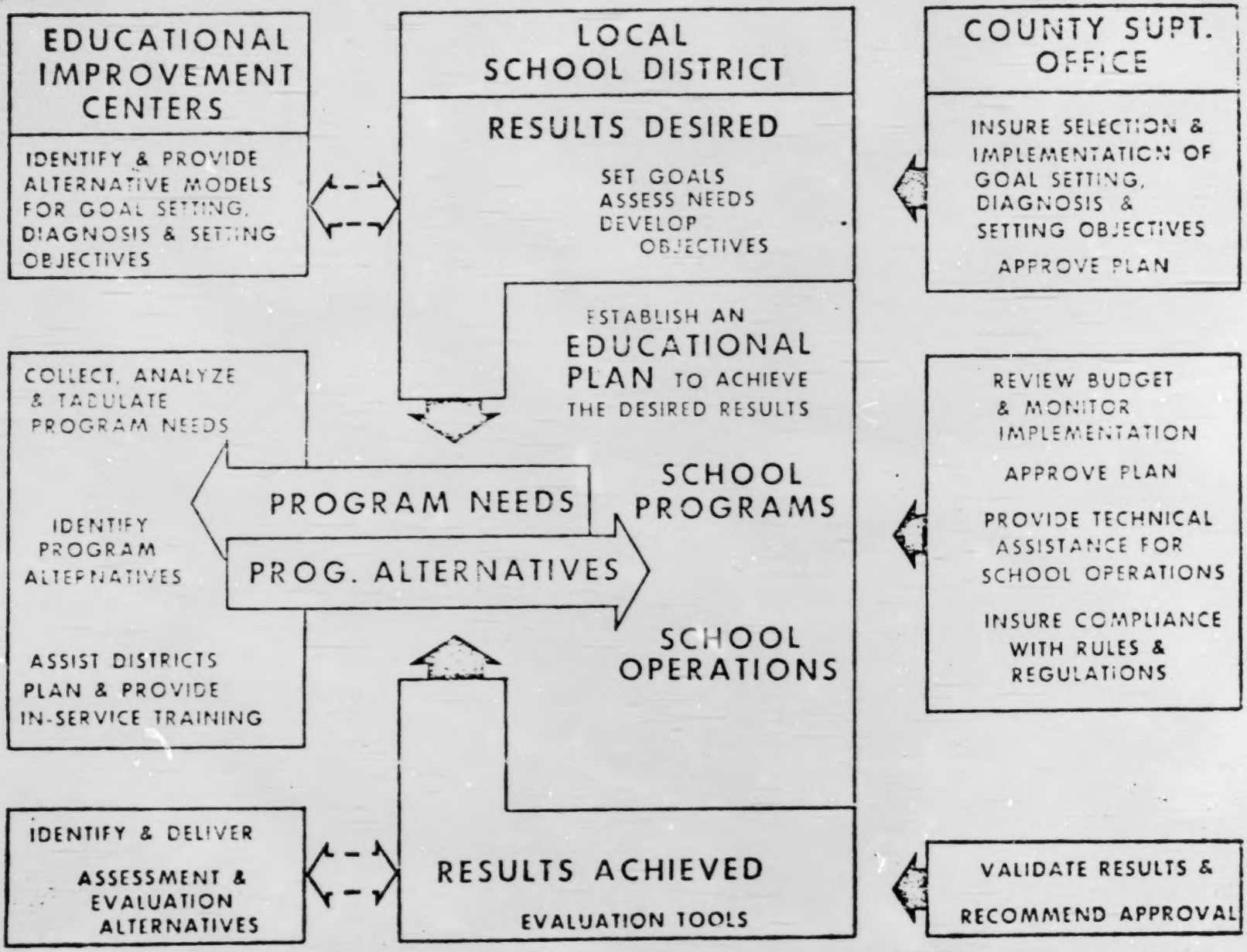
Educational Needs (Finding the "gaps")

Let's look at what T&E means to the local school district. The legislature is saying schools must be able to say more clearly what educational results are desired, what the educational plan is to achieve the desired results, and finally what results have been achieved.

Specifically, the legislature said schools must, through some legitimate means, establish goals, determine where the students are in relationship to the goals, and set objectives. They must then develop a plan to achieve the objectives, and third, they must, within the state of the art, identify and administer an evaluation program that will help determine what results have in fact been achieved by the programs and at what cost. Clearly, this is a local determination model that insures local determination of goals and objectives, local determination of the programs to achieve the objectives and locally determined evaluation to gauge the effectiveness of the programs. While this appears to be and is a formidable task, New Jersey educators have demonstrated considerable skill and knowledge in these matters. Many schools already have successful goal setting and evaluation models in place and operating.

One important result of this T&E process, however, is that for the first time, we will all have a much clearer picture of what program needs exist in the schools of our state. As you see in Figure 1, the discrepancy between results desired and results achieved will give us the program needs.

IMPLEMENTING THE LAW - WHO DOES WHAT?



Strategies for "Filling the Educational Gaps"

The Elementary and Secondary School Act of 1965 brought to the public and non-profit sector millions of dollars for the development and dissemination of improved educational programs. For the first time, educators at the elementary and secondary level, state department staff and others had funds available for program improvement through development. Previously, virtually all funds available to schools had been committed to day to day operations.

Early emphasis in this new broad based development effort focused on the "creative idea" for improving education. Before long it became evident that a "creative idea" was not enough, such an idea had to be related to a "need". An important concept became the differentiation between "changing things" and "changing people". Careful attention was given to strategies of change. The addition of "clear result statements" completed the evolution of systematic planning as an essential element in the development process.

A focus on accountability was bound to follow on the heels of the funding of thousands of development efforts across the country. This focus brought to development concepts of monitoring, auditing and wide scale evaluation of learner outcomes.

Simultaneously with the strengthened emphasis on evaluation came the push for dissemination. Legislators and taxpayers criticized the development effort because the developments were not spread from place to place and duplication of effort was widespread. In response, programs were encouraged to set aside funds for dissemination as soon as they were funded. In many cases products and processes claiming to enhance education, had not even been developed, no less field tested, when they were being broadly advertised across the country. Even where programs were evaluated as successful, dissemination efforts were limited mainly to distribution of brochures, speaking engagements and one day workshops.

By 1969-70, it became clear at least in a number of development communities both at the State and Federal level that education didn't need more programs, but more programs that worked! Development became viewed as a sequential set of activities involving--needs assessment, design, field testing, evaluation, certification of success and dissemination. Some states and some agencies at the federal level began to establish or contract to establish standards and procedures for validating the "success" of programs as a basis for selecting programs to be disseminated. Today hundreds of validated R&D products are available to potential consumers.

Finally, it became clear that if successful practices were to be widely spread sophisticated dissemination strategies would have to be developed. Brochures and day lectures were not going to lead to program adoption. This was particularly true of programs requiring large scale change in local educational patterns. In many cases the programs with the greatest social significance

were the hardest to install in new settings. Building potential for exportability became a focus. This included cost analysis for adoption, material packaging, linkages with publishers, training programs and finally the development of a national communication and "linkage" network to facilitator adoption of programs across the country.

The development system as it has emerged over the past twelve years is a sophisticated delivery process. The programs developed through this system are the types of programs which are needed by the schools but they rarely offer enough of a profit motive to the private sector to justify their underwriting the development and dissemination costs. It has been demonstrated that through a publicly sponsored development process successful meaningful programs can be produced and widely installed to meet educational needs.

Dissemination as a Strategy for School Improvement

R&D products are available which address a wide variety of local needs, however, is dissemination a viable major strategy for school improvement? Certainly dissemination can be defended in terms of cost efficiencies. The development and field testing of new educational program (curriculum, management structure, combination of curriculum and management structure, etc.) can run from $100,000 to well over a million dollars. Local school districts are having difficulty just maintaining programs with the economic pressures of the late seventies. The local finance condition leaves virtually no funds for development. Federal sources for development have not increased significantly since 1965 and represent a very meger investment in R&D.

Those state and federal funds which are availablr for R&D must be targeted to the areas of need where successful program options are not available. In additon, these state and local R&D funds are now the main support for dissemination of products and processes produced.

More and more R&D funding has been used for dissemination over the past four or five years as dissemination has emerged as a potentially high "payoff" actively in terms of school improvement. Twelve New Jersey projects in dissemination alone have been adopted in 42 states, Puerto Rico, Micronesia and Europe and effect 332,446 children. Is then the emphasis on dissemination a successful strategy for school improvement? Results are far from conclusive, but some of the early data is examined below.

Are districts interested in solving problems through adoption of R&D outcomes?

Of the 589 active school districts in New Jersey, 432 had adopted/adapted at least one of 35 different programs out the 123 programs (see Appendix A) which had been made available to districts

through the SEAs dissemination network of EICs, Right-to-Read, Vocational Education, IGE Leagues, National Facilitator Network, and Title III producer/consumer network by 1976. Fourteen of the 35 programs adopted were developed outside of New Jersey including SWIRL from the Southwest Regional Laboratory and IGE from the Wisconsin Laboratory. The 20% highest need districts as evidenced by reading and mathematics scores on Statewide tests, adopted a total of 348 programs as compared with the lowest 20% need districts which adopted 156 programs. The total number of adoptions through the SEA dissemination network was 1,376. (See Figure #2.)

The adoption pattern across types of districts by need appeared to be constant with 34-38% of the adoptions in the areas of reading and language arts, 1-3% in mathematics, 44-35% in career education, 6-11% in classroom management, .5-1.8% in social relationships, 7-9.4% in special education, and the remaining small percent in educational management, environmental education, and humanities (see Figure #3).

"Year of adoption" data were available for the New Jersey Title III projects, ESEA 306 funded Developer Demonstration projects, and Right-to-Read. This represents 98 of the 123 programs available through the formal networks. The data covers 888 adoptions from 1972 till June, 1975. The pattern shows an increase in adoptions between 1972 and 1974 from 27 to 267 -- a 1,000% increase. (See Figure #4.)

The records show a direct relationship between the number of adoptions and the availability of programs for which awareness, training, and technical assistance is available to adopters. Based on the above 888 adoptions by year, we find that in 1972, there were six programs disseminated and the 33 adoptions were of those six programs. All of the programs were from New Jersey except the IGE-MUSE porgram from the Wisconsin R&D Center which was disseminated in New Jersey under grants from Kettering Foundation and ESEA Title III. In 1973-74, twelve New Jersey R&D producers provided dissemination services, services were available through an EIC for one out-of-state Title III program, and the IGE-MUSE program was available from the New Jersey IGE-MUSE Center. All 122 adoptions were of these 14 programs. In 1974, USOE funded the National Diffusion Network of Facilitators and Developer/Demonstration sites, and the available pool of programs for which dissemination services jumped to 98. And adoption figures based on the 888 adoptions under discussion represented 22 different programs from nine different states. The first half of 1975, figures show the same pattern of adoption. (See Figure #5.)

FIGURE #2 -- NUMBER OF ADOPTIONS BY NEED

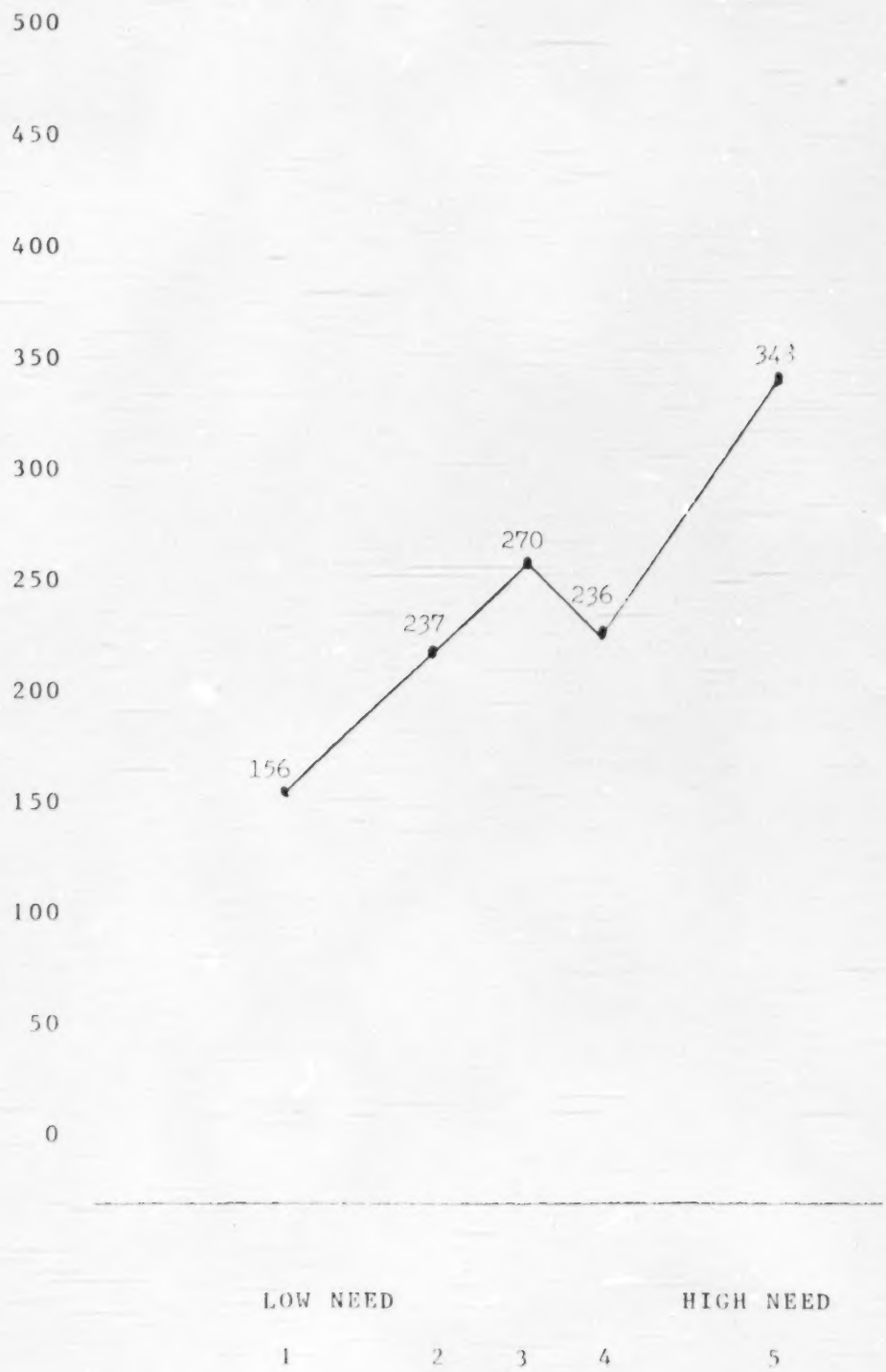
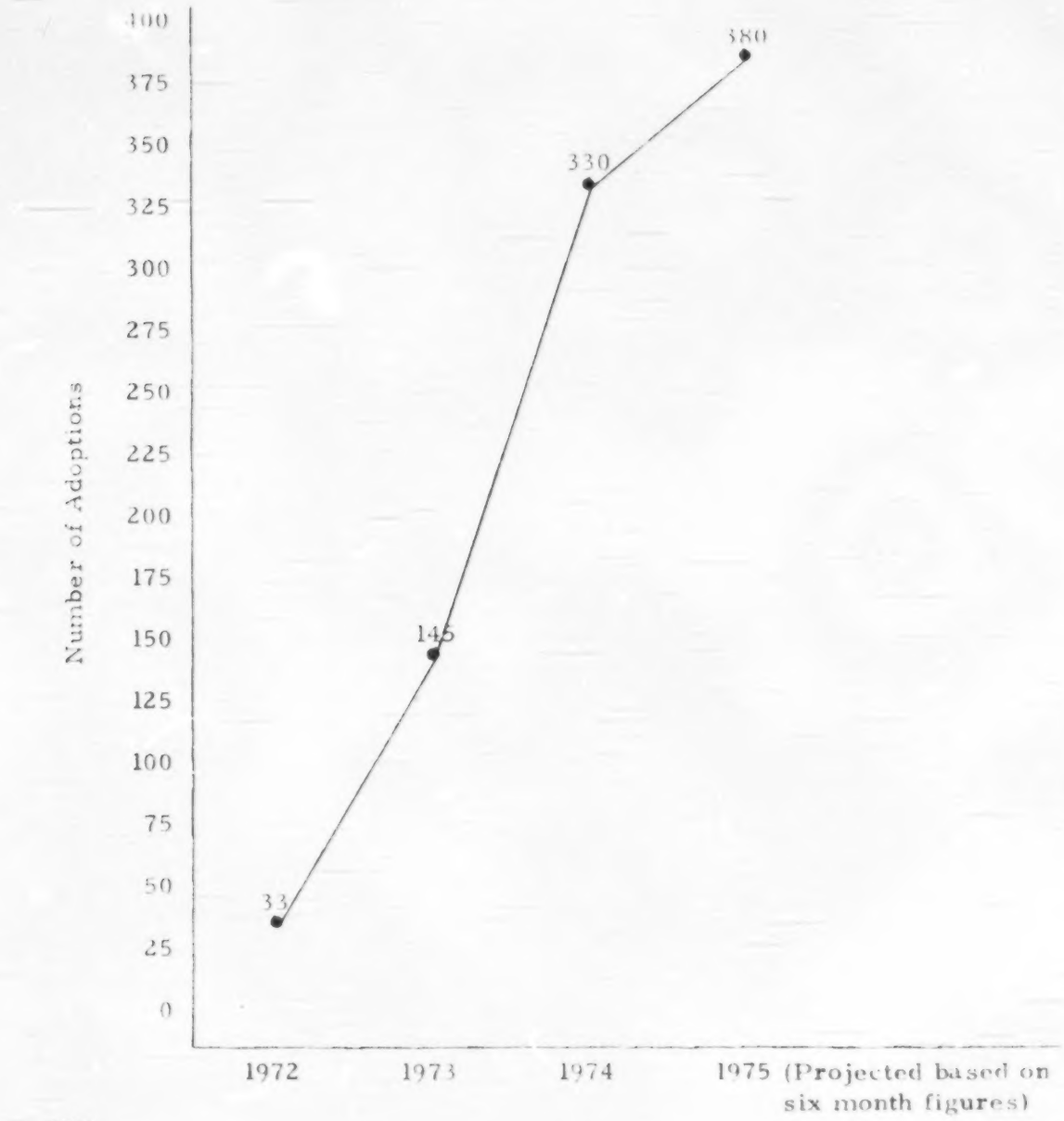


FIGURE #3 -- PERCENT OF ADOPTIONS BY TYPE OF PROGRAM FOR EACH NEED LEVEL

	Highest Achievement	Middle Achievement	Lowest Achievement
	%	%	%
Reading	38	34	37
Mathematics	3.9	.7	4
Special Education	7.8	9.4	7
Career Education	33.5	44	35
Classroom Management	11	6.3	9
Social Relations	0	.4	1.8
Humanities	.7	1.9	1.8
Other	5.1	3.3	3.4
n =	156	270	349

FIGURE #4 -- DISTRIBUTION OF ADOPTIONS BY YEARS



n= 888

FIGURE #5 -- NUMBER OF ADOPTIONS BY YEAR AND NUMBER OF AVAILABLE PROGRAMS **

	Number of Adoptions	Number of Programs
1972	33	6
1973	145	14
1974	330	98
1975	380 (Projected based on half-year figures)	98

n = 888 (only those adoptions recorded by year)

** Available program means materials, training, and technical assistance available to adopters.

In summary, are districts interested in solving problems through adoption of R&D outcomes? The data supports a positive response. Those districts with the greatest needs show more than twice as many adoptions as low-need districts. "Adoptions by year" show a consistent pattern with high-need districts outnumbering low-need districts two to one, even in 1972 -- the first year for which data is available. Finally, and probably most significantly, there is a direct relationship between the number of programs "available" (awareness, materials, training, and technical assistance) and the number and distribution across the nation. General information concerning virtually all the programs in the R&D pool, represented in this study, was available from ERIC and other publications in 1972. In addition, many of these programs welcomed visitors to demonstration sites; however, adoptions did not occur (and a strong case could be made for "could not") until formal linkage services were provided and the programs became "available" in a comprehensive way. Finally, it is interesting to note that in the same period 1972-75 which shows such an increase in interest in use of R&D producers, that there has been a steady decrease in the number of requests for pure development assistance (under ESEA Title III) and that the requests received (which still outweigh funding sources) have contained fewer proposals for "reinvention of the wheel."

Profile of High Need Non-Adopters

There were only 18 districts among the 109 highest need districts in New Jersey which had not adopted a program by 1976. There were no "urban center" community-type districts in the non-adopter group. Only 12 of the 18 non-adopters were coded by census track data. The other six were area vocational schools and regionals. Of those coded, 33% were classified urban-suburban (near an urban center, but not as highly developed), 25% were suburban, and 42% were rural. Seven of these districts, or 39%, were vocational schools or other reigonals serving only secondary populations. (See Figure #6.)

The District Factor Grouping is a combined weighted factor which includes educational level of males and females over 25, occupation, mobility of population, density per housing unit, urbanization, income, unemployment, and poverty. Ten of the 18 non-adopter districts were coded on the DFG. The districts are ranked based on the weighted DFG score and placed in one of ten groups lettered A-J. Nine of the ten districts were classified in the lower half of this scale. (See Figure #7.)

Profile of High Need Adopters

There were 109 districts in the highest need quintile in reading and all but 18 of these were also in the lowest quintile in math. Twenty-four of these districts were classified as urban center, ten as urban-suburban, ten as suburban and suburban-rural, and 44 as rural or rural center, the rest were unclasified. However,

Figure #6 -- Disbribution of Adopter and Non-Adopter Districts by Community Type for the Highest Need Basic Skills Districts

	Non-Adopter Districts	Adopter Districts
Urban Center	0	24
Urban-Suburban	4	10
Suburban and Suburban Rural	3	10
Rural and Rural Center	5	44
Vocational	4	3
Regional District Unclassified	2	0
TOTAL	18	91

n = 109 Districts

Figure #7 -- Distribution of Adopter and Non-Adopter Districts in the Highest Need in Basic Skills Quintile by District Grouping Factor

	Non-Adopters	Adopters
A Lowest 10%	2	34
B 10%	1	18
C 10%	3	12
D 10%	1	6
E 10%	2	3
F 10%	1	--
G 10%	-	--
H 10%	-	--
I 10%	-	--
J Highest 10%	-	--
V Vocational	4	3
K Less than 300 Students	4	15
Uncoded		
	18	91

n =109

Statewide testing data indicates that the target districts have needs in both math and reading/language arts.

Thirty-seven percent of the adoptions in this highest need group have been in reading/language arts; however, only 4% of the adoptions have been in the area of mathematics.

the 24 urban center districts represent 307,505 students in the State. (See Figure #6.) Of the coded districts, all but one fell in th lower 50% of the District Factor Grouping, and 73% of the districts fell in the lowest 20% area. Fifteen districts were smaller than 300 students and were not coded by DFG nor were the three vocational schools in the group because of the diverse population served. (See Figure #8.)

Conclusions

1. All high need urban center districts are at least minimal adopters.

2. Rural and blue collar suburbs also show high needs for basic skills improvement.

3. Eight-three percent of the highest need districts in the State have adopted a validated (IVD or JDRP) or other quality controlled program since 1972.

4. Adopter districts and non-adopter districts both are in the lowest half of the District Factor Grouping, but a greater percentage of the lowest DFG district are adopters. This is important since out of all 1,376 adoptions reported in this study, only 25 adoptions were facilitated through outside funding, and 20 of these 25 grants were for under $5,000 and were used primarily for evaluation purposes. In most other cases, awareness, training, and technical planning were provided free by the State and districts picked up the costs for substitutes or teacher pay for summer and materials. In a few of the poorest districts, some very limited funds have been made available to share the cost of substitutes for teachers taking training.

5. Based on the need for improvement in mathematics achievement and the low adoption rate in this area, special emphasis needs to be placed on dissemination of mathematics alternatives.

Mr. Jack Butler of the Woodrow Wilson Institute, Princeton University recently concluded a study of dissemination to determine what factors are associated with high adoption rates. Mr. Butler looked at the adoption rate from two perspectives 1) percent of students effected b, the innovation and 2) the number of adoptions in the district.

The study was conducted of New Jersey districts and the adoptions studied were ones which had been judged as being learner effective through one of the independ processes used by the New Jersey Department of Education, the United States Office of Education or the National Institute of Education.

Mr. Butler found that the percent of students affected by the innovation ranged from .003-.14 and was significantly correlated in the negative direction with achievement and per pupil teacher ratio and positively correlated with experience of non-professionals.

Mr. Butler found that the number of adoptions in the district was negatively correlated with socio-economic status and administrator to teacher ratio and positively correlated to expense base (the degree to which the community taxed itself.)

Mr. Butler concluded that the "high need" districts are using dissemination as a strategy for school improvement to a greater degree than "lower need" districts and that adoption is correlated with such factors as staff-student and admin.-staff ratios and the degree of effort a community puts forth in terms of taxes.

Can local districts really resolve their educational problems through better use of R&D outcomes? Because most of the adoptions listed above have been in place for less than two years, reports of student effectiveness are just beginning to appear. Although it is too early to make definitive conclusions, a study of 22 adoption sites by the Title III Dissemination Office contains some important findings. The data was based on six months to one school year of student involvement in the program in the 1974-75 school year. In 19 of the adoptions, an assessment of cognitive growth was involved. Of those assessments, 13 showed significant growth at the level expected, and some surpassed their expected gains. Affective measures were employed in 12 of the adoptions. Eleven of the affective evaluations showed improved attitudes and/or behaviors on the part of program participants. In almost all adoptions, the programs employed evaluation designs based on pre-post testing or randomly chosen experimental and control groups based on the design used in the original producer site. In all of these cases, adopters expressed the opinion that the program was an improvement over previous practice and planned to continue the program. In cases where significant improvements were not found in student achievement, districts planned program modificiations or expressed the opinion that the program had not been in operation long enough to get significant results.

If R&D products are available, districts are adopting them and at least our minimal data indicates that student learning is being increased, why then do educational problems as evident by statewide testing scores and public and professional opinion still exist? A number of reasons can be quickly proposed: (1) recentness of use of R&D products; (2) high achieving districts are also adopting new programs, thereby raising the entire scale of achievement; (3) while the number of adoptions is large, the percent of the population with the need effected is small. The future may show that all of these factors and others play a role in the effectiveness of solving educational problems through R&D. The

passage of time should provide important data concerning "recentness." Professionals in high as well as low achieving districts are constantly identifying problems; public agencies cannot prevent nor should they try to retard problem solving even in the highest achievement districts in order to reduce the gap between high and low achieving districts. If low achieving districts are improving, even if it is at a slower rate than high achieving districts, this still means improved services and achievement for high need students. The last hypothesized reason for low overall impact of R&D on problem areas appears to us to play a potentially significant part' namely, the adoptions to date have affected only a small percentage of the impacted population. In Newark, for example, there are fourteen recorded adoptions of eight programs. Five of these programs are in basic skills; only two of these programs are in more than one school, and nine are in more than three schools. Finally, one of the two programs which is in more than one school is limited to kindergarten. On the other hand, one has to consider the scope of Newark -- 74,000 students in over 100 separate schools.

While no conclusions can be drawn it is interesting that on the most recent State Assessment Test results show only 9.6% of the students fell below the state standard of 65% at the fourth grade level. Results for math at the fourth grade showed 27.9% below the standard. The percent of students falling below the standard of 65% at the grade levels listed were as follows:

	Math	Reading
4th	27.9%	9.6%
7th	39.6%	25.8%
10th	26.0%	23.0%

It is at the lower elementary level where the greatest number of R&D products and processes have been developed and installed and the greatest number of these programs have been in reading. It may be that we are finally seeing through indirect measures the results of R&D adoption in the schools.